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REMARKS

In the Office Action, the Examiner indicated that claims 34 and 35 are pending in the application and the Examiner rejected all claims.

Rejection of Claims 34 and 35 under 35 U.S.C. §103(a)

In item 2 of the Office Action, the Examiner rejected claims 34 and 35 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,822,747 to Graefe et al. in view of U.S. Patent No. 6,086,619 to Hausman.

The Present Invention

The present invention allows different optimization problems to be solved with fewer iterations and improved response time. In a preferred embodiment, a predetermined number of anticipated financial portfolio optimization problems and calculations that are typically performed in solving them are pre-solved. Data associated with and derived from these calculations, e.g., anticipated input values, intermediate calculation values and optimal solutions to the anticipated problems, are stored in a database or the like. The prestored data in the database are used to reduce the processing time involved in obtaining optimal solution(s) to a current financial portfolio optimization problem to be solved.

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U.S. Patent No. 5,822,747 to Graefe et al.

U.S. Patent No. 5,822,747 to Graefe et al. ("Graefe") teaches a system and method for optimizing a database query. The system consists of a search engine and a database implementor that determines an optimal plan for executing an SQL query. The SQL query is represented as a query tree consisting of a number of nested expressions. The search engine generates a number of plans from which an optimal plan is selected. Only after the optimal plan is selected are the optimization problems solved in Graefe et al. The Examiner previously acknowledged that Graefe fails to teach storage of a plurality of data groups whereby the data groups include optimal solutions to corresponding anticipated optimization problems, and solving a current optimization problem using the stored data groups. However, the Examiner now contends that Graefe teaches these limitations. In the most recent Office Action, the Examiner acknowledges that Graefe fails to explicitly teach financial information optimization.

U.S. Patent No. 6,086,619 to Hausman

U.S. Patent No. 6,086,619 to Hausman ("Hausman") teaches an apparatus and method for modeling optimization problems providing variable specification of both input and output in enhanced graph theoretic form. Problem elements including nodes and links may be defined, as may constraints on nodes and links and on groups of nodes and links, including proportional and required relationships between network elements and groups of network elements that are connected and unconnected. Data received in enhanced graph theoretic format are transformed into the form of an objective function, possibly including linear, bilinear, and quadratic terms, and

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a system of constraints, which are then solved using network program, linear program, or mixed integer linear program software.

The Examiner has not Established a *prima facie* Case of Obviousness

As set forth in the MPEP:

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skilled in the art, to modify the reference or to combine reference teachings.

MPEP 2143

The requirements of a *prima facie* case of obviousness have not been met. As the Examiner previously acknowledged, Graefe fails to teach the pre-solution of optimal solutions to anticipated portfolio optimization problems and storage of these pre-solutions, and then use of these stored pre-solutions in solving a current portfolio optimization problem. However, in the pending Office Action, the Examiner now states that Graefe does disclose these limitations. The Examiner points to Graefe's generation of a solution to a subproblem as evidence of these limitations (Graefe, col 2 lines 30-65). The text of Graefe, however, discloses a different set of steps, none of which involve the pre-solving of anticipated portfolio optimization problems. Graefe takes an input query already submitted by a user (Graefe col 6 lines 53-60). This input query is parsed into a query tree, which acts as an internal representation of the input query. It is this query tree which is "further partitioned into one or more subproblems" (Graefe col 11 lines 50-51). The subproblems in Graefe are merely portions of the original input query. As the input query is only solved after the user has submitted it, there is no anticipation of a portfolio optimization problem as asserted by the Examiner, nor is there any pre-solving of said anticipated

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portfolio optimization problem. Graefe simply partitions an input query into smaller subproblems for simultaneous solving, not for pre-solving of anticipated portfolio optimization problems.

Hausman is an apparatus and method for modeling linear and quadratic programs. Applicant does not deny that modeling of programs in this manner is well known; applicant does not claim to have invented this technology. However, nothing in Hausman suggests or teaches pre-solving anticipated portfolio optimization problems and storing the results of these pre-calculations so that they may be later used to speed up the process of solving a current portfolio optimization problem when needed. Without any such teaching or suggestion, it is inappropriate to reject the claims based on Graefe or Hausman, either alone or in combination.

Both independent claims 34 and 35 herein include the limitations of storing the pre-solution of optimal solutions to anticipated financial portfolio optimization problems, and then use of these stored pre-solutions in solving a current financial portfolio optimization problem. Accordingly, for the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the rejection of the claims under 35 U.S.C. §103.

Additionally, the Examiner states that Graefe fails to explicitly teach financial information optimization. The Examiner relies on Hausman to teach the use of a specific construct, QUADCOSTS, and a network optimization method, Netcore, to modify Graefe to include financial portfolio optimization. Hausman, however, is an apparatus and method for modeling network optimization problems where attention can be paid to nodes and links which may be problematic. The Examiner states that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Graefe to include financial taught by Hausman in order to perform optimization on a financial portfolio." No teaching of

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applying the optimization techniques used by Hausman to database input queries is disclosed in the teachings of Hausman. Nor does Graefe disclose that network optimization techniques can be applied to database input queries. Therefore, it is impossible to assert that it would have been obvious to modify Graefe as taught by Hausman as neither provides motivation for such a combination of teachings.

Both independent claims 34 and 35 herein include the limitation of anticipating financial portfolio optimization problems. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of the claims under 35 U.S.C. §103.

Conclusion

The present invention is not taught or suggested by the prior art. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of the claims. An early Notice of Allowance is earnestly solicited. The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 09-0457.

Respectfully submitted,



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Date

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